No. IV.

DRAWING LINES TO INACCESSIBLE DISTANCES.

The SILVER ISIS MEDAL *was presented to Mr. D. O'*BRIEN, *of the New Road, Woolwich, for his method of Drawing Lines to Inaccessible Distances by means of a* T *Square and Two-Foot Rule.*

THE object of Mr. D. O'Brien's invention is to substitute two instruments, supposed to be in the possession of most architectural draughtsmen, viz. a T square and a single-jointed two-foot rule, for the centrolinead.

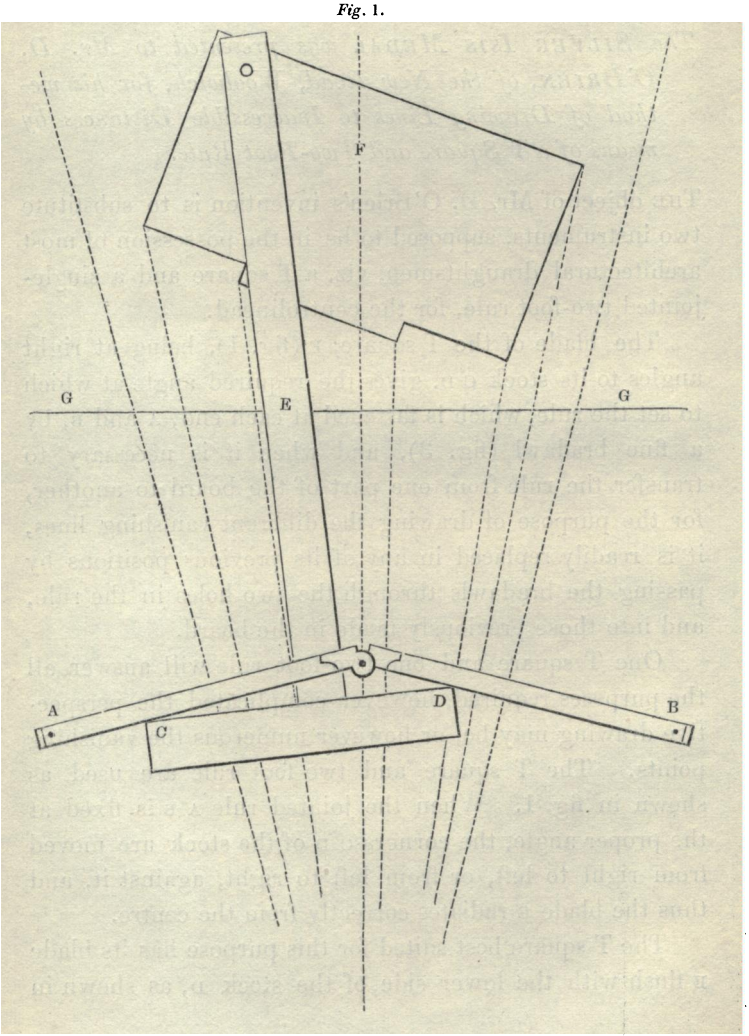
The blade of the T square, E (fig. 1), being at right angles to its stock C D, gives the required angle at which to set the rule, which is fastened at each end, A and B, by a fine bradawl (fig. 3), and when it is necessary to transfer the rule from one part of the board to another, for the purpose of drawing the different vanishing lines, it is readily replaced in any of its previous positions by passing the bradawls through the two holes in the rule, and into those previously made in the board.

One T square and one two-foot rule will answer all the purposes required, however complicated the perspective drawing may be, or however numerous the vanishing points. The T square and two-foot rule are used as shewn in fig. 1. When the jointed rule A B is fixed at the proper angle, the corners C D of the stock are moved from right to left, or from left to right, against it, and thus the blade E radiates correctly from the centre.

The T square best suited for this purpose has its blade E flush with the lower side of the stock D, as shewn in

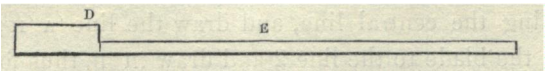
section fig 2, having one edge of the blade placed at the middle of the stock. The middle of the rule fig. 3 lies on the blade, and its two ends are supported by small pieces of wood of equal thickness, bradawls passing through

Fig. 1.



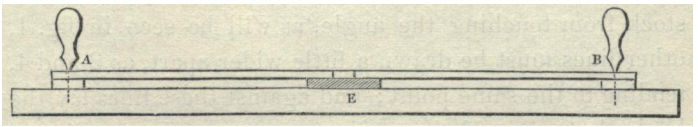
which keep the rule in its proper position; thus the blade E can be moved freely under it.

Fig. 2.



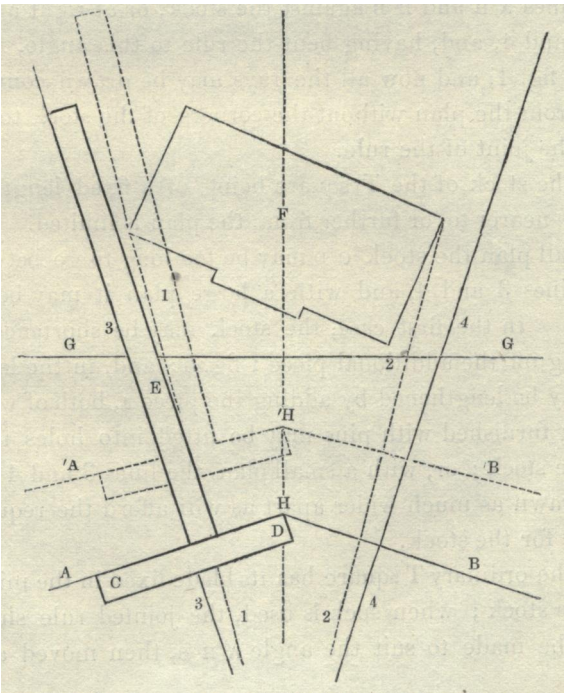
To set the rule A B for projecting any given plan as F in fig 1 on to the plane of the picture G G, determine

Fig. 3.



the angle under which the plan F fig. 4 is to be viewed, and draw the lines 1 and 2 converging equally to such

Fig. 4.



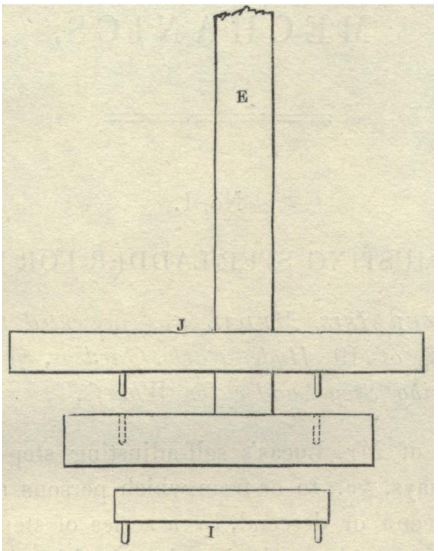
angle, then bisect the angle by the line F H, and, supposing the rule to have no projecting joint, lay the T blade against the line 1, with the right corner of the stock just touching the central line, and draw the line 'A 'H; then apply the blade to the line 2 and draw 'H 'B, thus forming the angle 'A 'H 'B, to which the rule is to be applied correctly; but as most two-foot rules of the ordinary description have a projecting joint which would prevent the stock from touching the angle, as will be seen in fig. 1, other lines must be drawn a little wider apart, as 3 and 4, tending to the same point; and against these lines lay the blade, but as much lower down, or towards the distant point, as will allow of the half stock fitting between either of the lines 3 and 4 and the centre line F H; next draw the lines A H and H B against the stock, or at right angles to 3 and 4, and, having bent the rule to this angle, fix it as in fig. 1, and now all the rays may be drawn converging from the plan without the corners of the stock touching the joint of the rule.

The stock of the T square being of a fixed length its range nearer to, or further from, the plan is limited. With a small plan the stock C D may be too long to go between the lines 3 and 4, and with a large plan it may be too short. In the first case, the stock may be shortened by taking off the additional piece I fig. 5; and, in the latter, it may be lengthened by adding the piece J, both of which being furnished with pins may be fitted into holes made in the stock; or, with a small plan, the lines 3 and 4 may be drawn as much wider apart as will afford the required space for the stock.

The ordinary T square has its blade fixed in the middle of the stock; when such is used, the jointed rule should first be made to suit the angle A H B, then moved aside

half the width of the blade, and there fixed, which will cause one side of the blade to coincide with the radial lines.

Fig. 5.



When a vanishing point is very distant, two pegs K and L, fig. 6, may be fixed to the stock, which will move against the inside of the rule, and obviate the inconvenience of the stock touching the projecting joint of the rule.

Fig. 6.